

PROCEEDINGS OF THE
ENTOMOLOGICAL SOCIETY OF WASHINGTON

VOL. 43

APRIL, 1941

No. 4

NEW NORTH AMERICAN GENERA AND SPECIES OF
APTERYGOTAN INSECTS OF THE FAMILY JAPYGIDAE.

By H. E. EWING,

Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

In recent years but little work has been done on the North American members of the Apterygotan family Japygidae. Nearly all the papers that have been published dealing with the North American species have been by the Italian entomologist, F. Silvestri, who has described a small number, chiefly from the Neotropical part of the continent. Under these circumstances the reporting in this paper of two new genera and three new species from North America should be of special interest.

The japygids described as new in this communication were all collected by W. F. Turner, of the Division of Fruit Insect Investigations, Bureau of Entomology and Plant Quarantine. They were obtained as soil inhabitants in a survey of the arthropods infesting the soils of peach orchards.

Order ENDOTROPHI.

Family JAPYGIDAE.

HEMIJAPYX, new genus.

Body sparsely clothed with short setae; no long tactile setae on abdomen.

Head with sides subparallel. Labium without palpi. Outer lamina of inner lobe of maxilla simple, long, setiform. Antenna with 18 segments; sense setae absent.

Thorax with a pair of straight, lateral, submarginal, tactile setae, considerably longer than the body setae, on each notum. Only the anterior ventral pair of thoracic spiracles present. Middle tarsal claw minute, sharply pointed.

Abdomen with segments VIII and IX of the usual shape. First abdominal sternum without median glandular organ. Subcoxal organ without microsetae, but with a row of five or six setae. Abdominal segments II and III each with a pair of large vesicles. Styli each with basal spur. Spiracles on segment VII circular, slightly enlarged. Tergum VI subequal to VII; tergum VII with outwardly rounded lateral margins and rounded posterolateral corners; tergum VIII about as long as VII, with posterolateral corners rounded. Forceps with similar arms, each of which has but a single articulating acetabulum, a single tooth and no denticles.

Type species.—*Hemijapyx unidentatus*, new species.

Remarks.—Only the type species is included in this new genus, which is unusual in that the arms of the forceps each has but a single tooth and no denticles and each is provided with but a single articulating acetabulum. Each of these arms is more of less fanglike, or resembles probably more closely the sting of a scorpion. They are excellently adapted for piercing the body walls of small arthropod victims upon which the species doubtless feeds.

This genus should have a position among the more primitive of the family, because of the following characters: The small number of segments in the antennae; the absence of sense setae from the same; and the absence of the median glandular organ.

***Hemijapyx unidentatus*, new species.**

PLATE 8, FIGURES 1, 2, 3.

Head subquadrangular, slightly longer than broad. Segment I of antenna as broad as long; segment II as long as I but not so broad; segments III and IV each with a single whorl of setae; segment XVI with two whorls of setae, XVII with three very irregular whorls and XVIII studded with setae, forming, however, only one distinct whorl, which is at the base. Mandible with proximal lobe formed into a bladelike projection; between it and distal clawlike tooth are two large teeth and five smaller ones as shown in figure 1. All but outer lamina of inner lobe of maxilla pectinate as usual, but outer lamina similar to a long, stout, curved seta, and extending almost to tip of strong maxillary claw.

Pronotum about as broad as long, with anterior transverse row of six setae including the two submarginal tactile setae and posterior transverse row of four similar but somewhat shorter setae, in addition to two small, short, lateral, marginal setae on each side. Mesonotum divided by a transverse suture, in front of which is situated a single pair of submedian setae. Metanotum larger than mesonotum, transverse suture very distinct. In front of transverse suture of metathorax are situated four rather small, submedian setae arranged in a transverse row and four submarginal microsetae (two on each side) situated near transverse suture not far from lateral margins of body. Legs equal; tarsal claws of a single pair equal.

Abdomen with first seven segments of about equal width and similar in shape; segment VIII quadrangular, slightly longer than broad; IX almost twice as broad as long but not so broad as VIII; X about one and a half times as long as broad and well sclerotized and pigmented. Each stylus with an inner, subbasal, curved seta in addition to outer basal spur. Each subcoxal organ occupying about one-fourth of posterior margin of sternum I and bearing five or six subequal, curved setae arranged in a transverse row. A pair of vesicles on abdominal segments I, II and III; those on II and III large and conspicuous. Abdominal segments I to VII each with a small pair of spiracles, those on VII being somewhat larger than the others. Forceps almost as long as segment X; each arm with a single articulating acetabulum which is entirely lateral; arms subequal, each with subbasal tooth very sharply pointed, setae of varying lengths as shown in figure 3.

Length of body including forceps, 2.90 mm.; width (that of abdominal segments III and IV), 0.25 mm.

Type locality.—Escambia County, Alabama.

Type (holotype).—U. S. N. M. No. 54394.

Remarks.—Description based upon two adult specimens taken in peach orchard soil July 10, 1936, by W. F. Turner (T-322). These adults are probably females, since the genitalia are very simple and there are no secondary sexual characters such as median foveae.

MIOJAPYX, new genus.

Body sparsely clothed with short, straight setae, but longer tactile setae also present.

Head with straight lateral margins which slightly diverge posteriorly. Labium without palpi. Outer lamina of inner lobe of maxilla simple, long, setiform. Antenna with 20 or 21 segments; sense setae absent.

Thorax with two pairs of straight, lateral, submarginal, tactile setae on each notum. Anteroventral pair of thoracic spiracles present; other thoracic spiracles absent. Middle tarsal claw of all legs minute to vestigial.

Abdomen with segments VIII and IX of the usual shape. First abdominal sternum without median glandular organ. Subcoxal organ with one row of setae and one row of microsetae. Abdominal segments II and III, as well as all following segments, without vesicles. Styli without basal spur. Spiracles on segment VII circular, slightly, if at all, enlarged. Tergum VI subequal to VII; tergum VII with outwardly rounded lateral margins and non-acute posterolateral corners; tergum VIII about as long and as wide as VII but with parallel lateral margins. Forceps with similar arms, each having an almost straight inner margin provided with medium-sized, irregularly-shaped, sharp teeth.

Type species.—*Miojapyx americanus*, new species.

Remarks.—Only the type species is included in this new genus, which is most nearly related to *Parajapyx* Silvestri. It differs from *Parajapyx* in that the styli are without the basal spur and abdominal segments II and III are without vesicles.

Miojapyx americanus, new species.

PLATE 8, FIGURES 4, 5, 6.

Head about as broad as long; lateral genal margins broadly rounded. Antenna with 21 segments; segment I fully as broad as long; segment II longer than I but not so broad; segments III to V each with several setae which are not arranged in a whorl; segment VI and several segments immediately distal to it, each with setae arranged in a whorl; end segment and several segments proximal to it each studded with setae which do not form as much as one whorl. Mandible with inconspicuous proximal lobe which is not formed into a tooth or blade; distal tooth long, curved, clawlike, considerably exceeding the others. All but

outer lamina of inner lobe of maxilla strongly curved and pectinate; but outer lamina long, curved, and setalike.

Pronotum but slightly longer than broad, with anterior curved row of six setae, including the four longer tactile ones, and a single posterior pair of discal setae. Mesonotum divided near its anterior end by a slightly curved transverse suture, in front of which is situated a single pair of straight, submedian setae. Metanotum similar to mesonotum and with similar arrangement of setae. Legs equal or about so; tarsal claws of each pair not quite equal.

Abdomen with first seven terga subequal, each divided by a transverse groove or line near its anterior end, in front of which is situated a single pair of submedian setae. Each of first seven sterna divided by a similar transverse groove, but the groove is situated farther caudad and in front of it is a transverse row of several setae. Segment I with two subcoxal organs occupying about two-thirds distance between the styli, each with four or five setae in the transverse row. Styli each with an inner subbasal, curved seta. Segment IX of abdomen about one-half as long as VIII; segment X with dorsum quadrangular and distinctly longer than broad. Arms of forceps shorter than segment X, but broad at base; each armed with about ten unequal, slightly curved, sharp teeth. Setae on each arm of forceps varying much in size and length, about six of the smaller ones arranged in a submarginal row near bases of teeth.

Length of body including forceps, 2.70 mm.; width (that of abdominal segments III and IV), 0.24 mm.

Type locality.—Saluda County, South Carolina.

Type (holotype).—U. S. N. M. No. 54395.

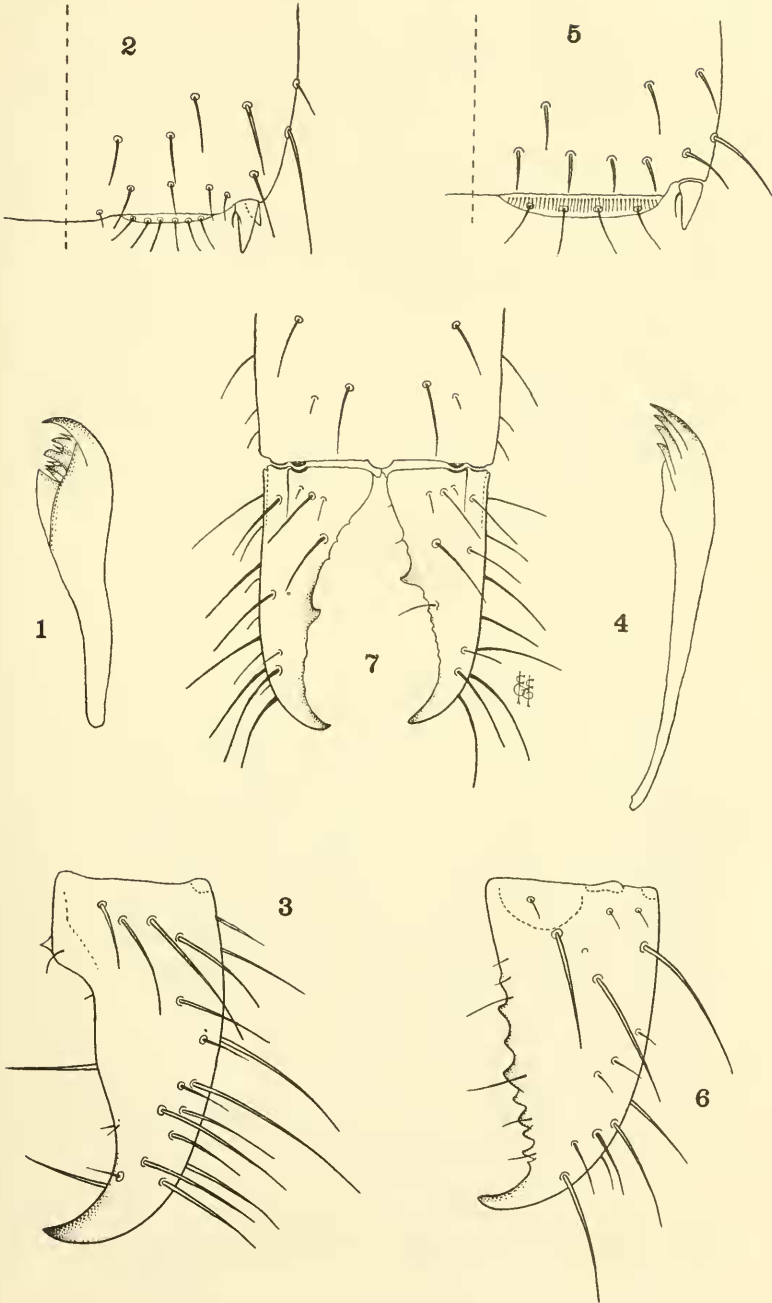
Remarks.—Description based on a single adult, in perfect condition, taken in peach orchard soil, August 6, 1936, by W. F. Turner (T-552).

Japyx turneri, new species.

PLATE 8, FIGURE 7.

Female.—Head about as long as broad, with sides slightly rounded outwardly. Antenna with 33 or 34 segments; segment I broader than long; II not so broad as I but longer; IV with two dorsal and one ventral sensory setae; V and VI each with two dorsal, one lateral and one ventral sensory setae. Antennal segments I to VI with setae irregularly placed; segments VII to XIV each with setae arranged in a single whorl; segments beyond XIV, except for the last two, with two whorls each, the more distal of which may be incomplete; last two segments well studded with setae not arranged in definite whorls. Mandible with five simple teeth; base of mandible slightly more forward than base of maxilla. All laminae of inner lobe of maxilla pectinate, but distal one more slender and with teeth set at an acute angle.

Pronotum with five pairs of long setae, four being submarginal, and four pairs of very small setae, one pair being very near lateral margins. Mesonotum with distinct, movable prescutum, which is provided with posterolateral, condylic plates, articulating with thickened front margin of scutum; prescutum with a pair of small, submedian setae and several very short and very sharply pointed



microsetae on each condylic plate; scutum of mesonotum with a pair of internal, posteriorly convergent, apodemal ridges. Metanotum similar to mesonotum but slightly larger. Mesothorax and metathorax each with a dorsal and a ventral pair of spiracles in their usual positions. Legs increasing slightly in size from the first pair backward; tarsal claws of each pair unequal; middle tarsal claw much reduced on front tarsi only.

Abdomen with first seven terga subequal, each divided by a transverse groove near the front margin and by a median suture. Each of first seven sterna divided by a similar transverse groove, but groove is situated farther caudad and there is no median suture. Segment I with rather small median glandular organ which contains about eight subequal, contiguous disculi. Subcoxal organs of segment I each occupying about one-fifth the distance between the styli and each bearing a row of six curved setae and a row of microsetae. Styli each with a subbasal, curved seta and usually with a small to vestigial basal spur. Segment IX of abdomen about one-half as long as VIII; segment X with tergum subquadrangular, the straight sides converging slightly posteriorly, and provided with a median, posterior, semicircular process as shown in figure 7. Arms of forceps very slightly dissimilar but to be regarded as of the "similar" type and almost as long as segment X of abdomen; dorsal articulating acetabulum of each arm heavily sclerotized, inner in position to ventral acetabulum but similar to the latter; setae and teeth of forceps as shown in figure 7.

Length of body including forceps, 5.26 mm.; width (that of abdominal segments III and IV), 0.65 mm.

Male.—Unknown.

Type locality.—Upson County, Georgia.

Types.—U. S. N. M. No. 54396.

Remarks.—Description based on two females, one of which was taken in peach orchard soil at the type locality, July 6, 1936, by W. F. Turner (T-244) and the other in a similar situation by the same collector, in Saluda County, South Carolina, August 5, 1936 (T-534). An immature individual, not considered in the description of the species, was taken at the type locality by Turner.

This species is similar to *J. intercalatus* Silvestri but has 33 or 34 segments in each antenna while Silvestri's species has only 28. Also there are fewer disculi in the median glandular organ in *turneri* than in *intercalatus*.

EXPLANATION OF PLATE.

(All drawings of equal magnification except no. 7, which is less magnified than the others.)

Fig. 1. *Hemijapyx unidentatus*, new genus and species; dorsal view of mandible.

Fig. 2. *Hemijapyx unidentatus*, new genus and species; ventral view of posterolateral aspect of abdominal sternum I.

Fig. 3. *Hemijapyx unidentatus*, new genus and species; dorsal view of right arm of forceps.

Fig. 4. *Miojapyx americanus*, new genus and species; dorsal view of right mandible.

Fig. 5. *Miojapyx americanus*, new genus and species; ventral view of postero-lateral aspect of abdominal sternum I.

Fig. 6. *Miojapyx americanus*, new genus and species; dorsal view of right arm of forceps.

Fig. 7. *Japyx turneri*, new species; dorsal view of posterior part of tenth abdominal segment and the forceps.

THE GENUS *Ectecephala* IN NORTH AMERICA (DIPTERA, CHLOROPIDAE).¹

By CURTIS W. SABROSKY,²

Michigan State College.

The genus *Ectecephala* Macquart, originally founded for the North American species *Ectecephala albistylum* Macquart, appears to represent a Neotropical element or derivative in the fauna of the Eastern United States. Approximately 25 specific names are available in the genus, of which seven names are Nearctic and fall within the scope of the present paper. If we follow Malloch's implication (1938, Proc. Linn. Soc. N.S. Wales, LXIII, p. 337) and limit the genus to those species possessing hairs on the posterior portion of the mesopleura, the genus *Ectecephala* s. str. in North America will contain *albistylum* Macq., *laticornis* Coq., *sulcifrons* Coq., and *sulcata* Sabrosky, new species.

The North American species referred to in the literature as *Ectecephala capillata* (Coq.) (See Becker, 1912, Ann. Mus. Nat. Hung., X, p. 71; Sabrosky, 1935, Trans. Amer. Ent. Soc., LXI, p. 235; and Brimley, 1938, Insects of North Carolina, p. 387) was found to be *Chlorops unicolor* Loew. The type of Coquillett's species is from Nicaragua, and I propose to restrict the use of *capillata* to that form; the paratypes from Georgia and North Carolina should be referred to *C. unicolor*. From the type in the Naturhistorisches Museum at Vienna I find that *Ectecephala similis* Becker is also a synonym of *unicolor*. In both *unicolor* and *capillata* Coq. s. str., as well as in several Neotropical forms described as *Ectecephala*, the mesopleura is glabrous, entirely lacking the fine hairs possessed by the geno-

¹ Journal Article No. 425 (n.s.) from the Michigan Agricultural Experiment Station.

² The writer is greatly indebted to a large number of institutions and collectors for the loan of material for study, and particularly to Mr. David G. Hall of the U. S. National Museum for his kindness in making available for study the long series of specimens accumulated by Dr. J. M. Aldrich. He also wishes to thank Mr. Nathan Banks for rechecking specimens with the type of *Chlorops unicolor* Loew. Study of other types involved was aided by Grant No. 352 from the Bache Fund of the National Academy of Sciences and by a Grant-in-Aid from the Permanent Science Fund of the American Academy of Arts and Sciences.